UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

Distr.: GENERAL

E/ECA/CM.15/13
15 March 1989

ENGLISH
Original: FRENCH

ECONOMIC COMMISSION FOR AFRICA

Tenth meeting of the Technical Preparatory Committee of the Whole

Addis Ababa, Ethiopia
27 March - 3 April 1989

Item 5 of the provisional agenda*

ECONOMIC COMMISSION FOR AFRICA

Twenty-fourth session of the Commission/ fifteenth meeting of the Conference of Ministers

Addis Ababa, Ethiopia
6-10 April 1989

Item 6 of the provisional agenda**

LC/NAIROBI.

REPORT ON NON-CONVENTIONAL FOOD RESOURCES IN AFRICA

* E/ECA/TPCW.10/1.
** E/ECA/CM.15/1.

I. INTRODUCTION

1. The main problem facing most African States is how to attain food self-sufficiency. This objective has been set forth in the economic and social development plans of all countries in the region and accorded top priority. And yet numerous surveys conducted on the world food situation have all come up with the sad realization that hunger and famine continue to plague many parts of the world. Millions of human beings do not have enough food and a still more substantial number cannot secure the food they need to maintain their health.

2. The FAO food survey conducted in 1985 revealed that food availability per inhabitant, when calculated in energy intake, increased by about 9 per cent in 14 years from 2,450 to 2,665 K/calory/day from 1969-1971 to 1983-1985. However, the gap between the developed and developing countries is considerable as are disparities within the same region. In sub-Saharan Africa, for example, per capita food availability has been stagnating for 15 years from 2,097 K/calories/day in 1968-1971 to 2,051 K/calories/day in 1983-1985 while the countries of North Africa as a whole recorded an increase of about 32 per cent over the same period.

3. The fifth FAO survey on nutrition also revealed that the average inhabitant of the least developed countries (LDCs) could, from 1979 to 1981, secure not more than one-third of the food available to the average inhabitant of the developed countries. Among the regions of the third world, Africa recorded the slowest growth rate in per capita food energy availability. This was noted principally in those countries where the available food was already insufficient. Most of them also happened to be low incomes countries.

4. The possible causes of the deteriorating food situation in Africa are many and complex. Among the factors generally blamed are drought, floods, the world economic crisis, unsuitable agricultural policies and population pressure. However, there is one inescapable realit: the food policies pursued in a good number of the countries most often go against the interest of local producers and consequently block, in some measure, the development of local food production while promoting the importation of food items.

5. Such serious food shortages have, in all the countries affected, created widespread malnutrition and even famine. The causes of malnutrition are complex and multi-faceted and bring into play a certain number of socio-economic, cultural and environmental factors whose relative importance is not always easy to determine.

6. Malnutrition does not have the same impact on all population groups. The most affected are the poorest who lack the resources to procure adequate food. Even within such groups, women and children, because they are the most vulnerable members of the family, suffer most seriously from the situation.

7. However, malnutrition is not a question of poverty alone because while not all the poor suffer from malnutrition, certain socially advanced groups are often confronted with nutritional problems arising from over-feeding

or poorly balanced diets. This is especially true of the major towns where imported foods abound and the better-off classes of people tend to consume prestige foods which are expensive into the bargain but not necessarily nourishing.

8. Cultural behaviour in matters of food, ignorance about the quality and nutritive value of foods, access to food resources and many other socio-cultural variables constitute so many factors that contribute to malnutrition.

9. In the face of such a virtually permanent food crisis which is at times worsened by adverse climatic conditions, African States have intensified and combined their efforts, with the help of international concerns, to reverse the downward trend of per capita food production. Structural reforms, new policy shifts and strategies for agricultural development have been envisaged and measures taken variously to address the problem in the short, medium and long terms.

10. More immediately, food deficits were covered by imports, complemented with food aid received essentially from Western countries in the form of cereal and cereal by-products.

11. The countries of the region have also become aware that while food aid is indispensable and necessary for emergency situations, it could become an impediment to the promotion of local food production. Indeed, the availability of food products provided as foreign aid and sold at subsidized prices has made large segements of the population to become dependent on such imported cereals as wheat and rice and at the same time led to gradual changes in food preferences to the detriment of local foods.

12. It is normal and justified for people to try to replace in part the starchy food with cereals and this is even desirable in order to have a balanced diet. However, this change in food habit should, to the extent feasible, be linked to specific programmes for growing those cereals in the countries concerned. Obviously, trade flows resulting from food deficits must be kept to the barest minimum if the countries are to develop economically.

13. It is within this context and in consideration, among other things, of the limitations for producing certain food items that the Economic Commission for Africa introduced into its work programme for the 1988-1989 biennum an element on non-conventional food resources.

14. The list of African food products that could be defined as non-coventional for the purposes of this report would be too long and this is not the purpose of this report. The nature of such foods may vary from country to country, from one geographical region to another and from one tribe to another depending on the socio-cultural and agro-ecological conditions prevailing. They may include plants cultivated or those gathered in their natural state and such insects as are gathered (termites, caterpillars, grasshoppers) or such wild animals as gazelles, antilopes and elephants.

15. Certain foods may not be consumed for a number of reasons that may be economical, cultural, psychological, sociological or religious. All these should be taken into account when planning and pursuing food strategies. It is often said that food habits are difficult to change particularly when considering the cultural and symbolic values attached to the particular food. The prohibition of certain types of food product will also require further in-depth study.

16. The purpose of this report is therefore to draw attention to the variety and wealth of food resources with which Africa is naturally endowed but which are usually little used by the people either because they are ignorant of them or choose not to eat them. Emphasis will be placed on the economic and nutritional importance of such foods, the energy, protein, vitamins and minerals they can provide particularly during the lean season when food intake is at its lowest. Furthermore, the introduction of many types of food that are gathered, picked or hunted and which are normally considered non-conventional would lead to making better use of local resources and contribute not only to raising nutritional standards for people but also provide work for a large number of them.

17. This report is addressed in particular to agricultural planners and policy makers and underscores the crucial role that such food items can play in the fight against hunger and malnutrition and, consequently, the need for them to be reflected in food and nutritional policies and strategies.

18. It has been prepared essentially from data and information collected in the course of missions undertaken to four countries of Central Africa, namely Cameroon, the Central African Republic, the Congo and Sao Tome and Principe. The purpose is to educate and to inform but while its scope is fairly limited, the fundamental principles underpinning this study as well as the conclusions and recommendations emerging from it could equally be applied to other African subregions.

19. Finally, to all intents and purposes, the time has come for African integration and economic co-operation and it would be more than advisable to provide a subregional basis for every activity, project or research programme in this area.

CHAPTER I
ANALYSIS OF THE FOOD AND NUTRITIONAL SITUATION IN THE CENTRAL AFRICAN SUBREGION

General economic data

20. The Central African subregion considered in this study includes countries members of the Multinational Programming and Operational Centre (MULPOC) based in Yaounde. They are Cameroon, the Central African Republic, the Congo, Gabon, Equatorial Guinea, Chad and Sao Tome and Principe.

21. The main characteristics of the subregion are, on the one hand, the vast potential which exists both in agriculture and mining and on the other hand, its heavy dependence on the outside world to meet food requirements.

22. Revenue from mineral resources including petroleum in Gabon, the Congo and Cameroon, diamonds and gold in the Central African Republic, together with revenue from the export of such agricultural products as coffee, cocoa, cotton, tobacco and timber enable some countries of the subregion to have one of the highest standards of living in Africa.

23. What is more, such dependency is rendered fragile and precarious by the irregular nature of trade channels and fluctuations in international commodity prices.

24. In Sao Tome and Principe, the economy is strongly dominated by cash crops like cocoa which accounts for more than 72 per cent of the productive land. In contrast, 60 per cent of the food calorie intake has to be imported.

25. In Gabon, the mining sector (manganese and uranium) contributed 30 per cent of GDP in 1970. Currently, petroleum has become the dominant export contributing about 40 per cent of GDP. Timber resources are also very important in Gabon.

26. In the Central African Republic coffee, cotton and timber accounted in 1982-1984 for about 60 per cent of national exports evaluated at $US 64.8 million while diamonds alone accounted during the same period for 25.2 per cent of total exports. In 1986, rough diamond output was estimated at 357,300 carats while cut diamonds were estimated at 2,500 carats.

Agriculture and food situation in the Central African subregion

Production and consumption

27. In the subregion, there coexist two completely different agricultural sectors which in many cases, are not closely interlinked. On one side are cashcrops meant for export and which generally become the purpose of major development projects and on the other side is the food sector which caters essentially for domestic consumption which is allocated an infinitessimal share of national investment in agriculture.

28. In the Congo, the peasant farming sector cultivates nearly 70 per cent of the land and provides the bulk of food products but is allocated only 10 per cent of state investment in agriculture.

29. In the Central African Republic, the traditional farming sector makes a crucial contribution to national food production but appears to be disfavoured in terms of investment.

30. In Gabon, agricutural production is still the responsibility of the traditional sector where farming practices have not much evolved over the centuries, hoes being the main implement used.

31. As to Sao Tome and Principe, food is produced on the one hand by state agricultural enterprises (roças) which use 29 per cent of the land put under

food crops and, on the other hand, by the private sector made up of small farmers and plantation owners and using a total land area of 3,900 ha.

Table 1: Major food products in the countries of the Central African subregion

Average production from 1984 to 1988 (in thousands of tons)

	Cameroon	Central African Republic	Congo	Equatorial Guinea	Gabon	Sao Tome and Principe	Chad	Total sub-regional
Paddy rice	112	11	2.5	1	-	-	13.8	140.3
Maize	369.2	48.8	7.8	10	-	-	36.8	472.6
Millet	395.4	55.4	-	-	-	-	487.6	938.4
Total cereal	876.6	115.2	10.4	11	-	-	538.2	1 551.4
Cassava	670	579.4	618	254.6	55.2	3.8	297.4	2 478.4
Cocoyam	-	58.6	-	56.6	-	-	8.8	124
Potatoes	169.6	-	2	-	-	-	13.8	185.4
Sweet potatoes	144.4	-	13.8	1.4	35.4	-	40	235
Yams	397	198.6	14.4	86	-	-	219.2	915.2
Plantains	1 006	65	64.4	171.4	-	-	-	1 306.8
Total roots and tubers	2 387	901.6	712.6	570	90.6	3.8	579.2	5 244.8
Total pulses	122.8	6	7.4	-	-	-	58.6	194.8
Total meat	107.8	62.4	15.6	22	-	-	65.6	273.4
Total milk	47.6	4.8	3	0.6	-	-	152	2208
Palm oil	91.2	2	15.6	3.8	5	-	-	112.6

Source: FAO 1988, Production Computer Print-outs - Statistics Division 25 November 1988, Rome.

32. Food habits are determined by a number of cultural, agro-ecological, socio-economic and psycho-sociological factors. These are in principle imposed by the natural environment, the social group and have to do with consumer tastes, preferences and the types of food available.

33. The introduction of new food items as a result of importation to offset national production deficits has somewhat disrupted the food habits of people in Africa. Consequently, there is a transition taking place in the food consumption pattern of African people, particularly of the well-off classes in the major towns.

34. There are wide differences in consumption patterns not only from one region to another, between the countryside and the towns but also between one social stratum and another in the towns. The urban pattern shows a high consumption rate of industrial products, livestock meat, cereals and other

imported food to the detriment of traditional staples. In contrast, the consumption pattern in the rural areas where the economy is essentially one of subsistence, has remained traditional and highly dependent on starchy foods and food collected, gathered or hunted. However, in spite of such heterogenity in food consumption patterns, it can be said that on the whole, the staple foods of the subregion are starchy with cassava dominating.

35. In the Central African Republic, nearly two-thirds of the food energy intake comes from roots, tubers and plantains with cassava accounting for the lion's share. Cassava is mainly used in the form of flour for preparing "balls" which can also be made from fresh tubers boiled in water and pounded.

36. Pulses and oil-seeds such as groundnuts, sesame and pumpkins seeds provide 10 to 15 per cent of the energy intake. However, their consumption is clearly declining in favour of edible oils in the towns. The non-oily pulses are little used in preparing food in Central Africa. They are consumed mainly in the central savanna in the urban centres within the country as niebe or asparagus beans. Traditional food recipes include packaged preparations of bean flour paste and termites or crabs to accompany the cassava ball.

37. Animal products provide 8 to 10 per cent of the energy intake. Beef is the most consumed in the capital, the urban centres and the western savanna.

38. Cereals such as millet and sorghum are representative of the food habits of the people living in the savanna. They are consumed in the form of a ball or paste cooked in water using a flour porridge. It should be noted that part of the millet and sorghum output is brewed into beer. Maize is most often cultivated in the southern part of the country. In the forest zone, fresh maize is prepared in packets in the form of a paste with vegetables, meat and termites. In the savanna zone, maize is ground into flour to be used in preparing maize balls. Rice is mainly consumed in the southern part of the country and the western savanna but, urban centres excepted, the demand for rice is relatively weak in the Central African Republic.

39. The consumption of green leaves is relatively high in the Central African Republic. They are particularly used during the lean season and important for achieving a balance in the mineral and vitamin content of the Central African diet even though their energy content is fairly limited. The national food (ngouza) which is highly appreciated by the people is prepared from young shoots of cassava leaves and may contain fresh or smoked fish, meat, groundnut paste, pumpkin seeds and palm oil. This sauce dish normally accompanies the cassava ball, plantain or rice.

40. In Sao Tome and Principe, the staple food is made up of bananas, breadfruit, and more recently matabala or cocoyam. The national dish, called "calalu" is generally composed of a green-leaf sauce, other vegetables, palm oil, meat or fish and is eaten with the breadfruit or matabala. Rice and bread are appreciated mostly by the urban population. Maize, which is the sole local cereal, is cultivated mostly for livestock and is otherwise consumed fresh or in flour form. Cassava is also consumed in flour form.

Table 2: Production, consumption and storage of food products in 1982 to 1984 (estimates) and in 1990 to 1985 projections

(in tons)

	1982-1984			1990		
	Consumption/year	Production/year	Imports for storage	Consumption/year	Production/year	Imports for storage
Maize	1 050	500	550	1 600	1 600	-
Wheat flour	3 700	-	3 700	3 700	-	3 700
Rice	3 100	-	3 100	2 600	-	2 600
Others*	8 700	8 700	3 100	11 000	11 000	-
Sugar	960	-	960	1 000	-	1 000
Oil	810	340	470	1 005	820	185
Milk (powder)	200	-	200	400	-	400
Meat	950	550	400	1 150	930	220
Fish	3 700	3 700	-	5 200	5 200	-
Beans	620	80	540	660	260	400
Salt (raw)	78	-	690	90	-	590
Salt (processed)	612	-	-	500	-	-
Total	24 480	13 870	10 610	28 905	19 810	9 095

Source: Interim report on the National Food Strategy of the Democratic Republic of Sao Tome and Principe prepared for UNDP by the Royal Institute for the Tropics, Amsterdam, August 1985.

* In cereal eeqiovalent.

41. The animal protein needs of the people of Sao Tome and Principe are largely met through fishing. Consumption rose from 27 kg/year/person in 1974 to 41 kg/person/year in 1984 and the Ministry responsible projects that per capita consumption would increase to 45 kg/year/person in 1990 and 54 kg in 1995. Until 1978, the country was importing fish but is now exporting frozen fish.

42. Food habits in Cameroon vary from province to province but generally the staples are cereals, roots and tubers. In the southern part of the country for example, cereals like millet and sorghum constitute the staple food of the people. In contrast, roots and tubers are consumed in very small quantities in that part of the country.

43. The high consumption level of fish goes to compensate the very low protein content of red sorghum thus allowing the people to have a fairly well-balanced diet. Garí or tapioca are consumed mainly in the coffee growing area and in Douala while dried cassava is consumed in the cotton and livestock area. Finally, yams and fresh cassava happen to be the crops whose consumption is most evenly distributed over the national territory of Cameroon.

44. In the Congo, the food consumption patterns vary widely but the staple remains cassava. In this connection, starchy foods like cassava, sweet potatoes, yam and plantain account for more than 70 per cent of the food caloric intake. Cassava consumption is estimated at 425 kg/year/person in the rural areas and at 175 kg/year/person in the urban areas. Among the rural people in the southern part of the country, cassava is the predominant staple food and very little else is eaten with cassava.

45. The urban food consumption pattern in the Congo shows a high consumption rate of wheat (estimated at about 84 kg/year/person) and cassava (which is consumed in various forms such as chikwanque and fufu). In the main towns, consumption is also characterized by the presence of imported foods which are virtually unknown in the rural areas, substantial quantities of fish (especially smoked fish accounting for 53 kg/year/person of fresh fish equivalent) and by appreciable quantities of meat. The inequalities in food consumption are most visible in the major towns where all food has to be bought. This is why for most of the people whose average income does not allow them to afford sophisticated food items which are relatively expensive, the daily diet is made up mainly of inexpensive foods such as cassava and smoked fish.

Table 3 below shows consumption levels of food in the urban and rural areas of the Congo.

Table 3: Consumption of food product (kg/person) in the Congo

Products	Modern pattern	Traditional pattern
Cassava (tuber equivalent)	175.0	425.0
Rice	12.0	1.5
Wheat flour	80.0	5.0
Plantain	30.0	30.0
Tuber (other than cassava)	7.5	7.5
Maize	2.0	2.0
Red meat	8.5	3.0
Poultry	6.0	1.0
Eggs	1.3	0.1
Edibles oils	7.2	6.2
Calories	1 805	1 634
Total protein	51.3	29.3
Animal protein	11.8	7.18

Source CIATA - Brazzaville, Esquisse d'une politique de développement agricole, July 1986.

46. As for other starchy foods such as plantains, cocoyams and macabo, their consumption is mostly limited to the forest area. They are usually cooked in water and served in pieces or pounded. Sorghum used to be staple of the people in the savanna zone but is steadily losing ground to cassava. Maize is little used as food, being mostly distilled or brewed into beverages like the other cereals.

Food dependency

47. The poor performance of food production resulting partly from the predominance of export crops has made the countries of the subregion to resort to massive importation of food in order to meet the needs of their people. Nevertheless, revenue from cash crops such as coffee, cocoa, cotton and timber have enabled them to meet expenses incurred in the importation of food and their food balance-of-payments (fishing products excepted) shows a surplus.

48. However, this apparently positive balance in the subregion conceals siginificant disparities from country to country. Those disparities are highlighted in the table below.

Table 4: Imports and exports of agricultural products (fishing products excepted) in the Central African subregion
(in thousands of US dollars)

	Imports				Exports			
	1983	1984	1985	1986	1983	1984	1985	1986
Cameroon	103.9	79.1	96.3	117.7	164.0	197.6	233.8	221.4
Central African Republic	19.9	14.3	14.8	19.9	2.8	2.9	3.1	3.3
Chad	13.2	23.0	37.0	20.9	105.0	104.4	86.6	86.0
Congo	55.5	69.1	66.6	63.6	2.7	10.1	11.5	8.3
Equatorial Guinea	3.9	5.0	4.1	3.4	13.4	15.2	17.5	13.0
Gabon	87.4	93.6	99.3	94.7	5.2	5.1	3.7	4.3
Sao Tome and Principe	4.1	4.9	3.9	4.0	10.8	9.8	7.2	6.0
Yaounde MULPOC	287.9	289.0	322.0	324.2	303.9	345.1	363.4	342.3

Source: FAO, 1987, Trade Yearbook, 1986.

49. In Gabon, the import of food and beverages has increased at an annual rate of 16.5 per cent in current value during the last decade with an acceleration over the last five years.

50. In the Central African Republic, the share of food imports in GDP rose from 35 per cent between 1975 and 1979 to 43 per cent between 1981 and 1984 while Sao Tome and Principe imported nearly all its maize, wheat, rice and beans.

51. With regard to the Congo, the table below shows national production levels and the degree of self-sufficiency attained in the production of the main staples.

Table 5: Production and consumption of various food products in the Congo during 1986
(in tons)

Product	Production	Consumption	Difference (Production-consumption = Imports)	Degree of self-sufficient (percentage)
Cassava	561 167	606 625	(50 000)	92
Plantains	66 624	62 124	+4 500	107
Ptatoes	400	1 582	(1 200)	25
Other tubers	17 131	15 531	+1 600	110
Maize	7 090	9 090	(2 000)	78
Rice	378	14 591	(14 200)	3
Groundnuts (shelled)	180	3 165	(3 000)	6
Dried beans	9 000	14 613	(5 613)	62
Fruits	16 167	16 567	(400)	98

Source: Peoples Republic of the Congo, Conseil national de l'agriculture, Analysis of the agro-food situation in the Peoples Republic of the Congo, November 1987.

Table 5 shows that the Congo is highly dependent on the outside world for rice and potatoes and less so for dried beans.

Table 6: Pattern of food imports in the Central African Republic from 1980 to 1985
(in thousands of tons)

	1980	1931	1982	1983	1984	1985
Wheat and other cereals	4.2	3.4	8.5	4.2	0.6	0.9
Salt	6.2	4.6	5.3	7.5	6.3	5.5
Sugar	0.6	0.0	1.9	3.8	3.6	7.2
Flour	8.3	8.6	2.4	1.4	0.9	2.2

Source: Central African Republic, Food security, Strategies for consideration, June 1988.

52. Even though the Central African Republic is virtually self-sufficient in staples such as starchy foods, cereals, oilseeds and petty livestock, it is still deficient in animal proteins, edible and industrial oils, sugar and some other items.

53. With the exception of Sao Tome and Principe and the Central African Republic, the countries of the Central African subregion are major importers of fishing products. In 1986, the imports of all types and categories of fishing products were estimated at $US 80 million of which Cameroon accounted for $US 38 million and the Congo for $US 30 million. The magnitude of these imports is shown in the table below.

Table 7: Imports of all types of fish, crustacea, molluscs, fish products and fish preparations of some countries in the Central African subregion
(1986 data ir kg/person)

Cameroon	:	8.3 kg/person
Central African Republic	:	negligible
Congo	:	18.5 kg/person
Equatorial Guinea	:	5 kg/person
Gabon	:	7.0 kg/person
Sao Tome and Principe	:	5.9 kg/person

54. With regard to food aid, the subregion received 107,600 tons of cereal in 1986 out of which 68 per cent went to Chad, and 3,098 tons of dairy products out of which 82.7 per cent went to Chad.

Table 8: Total cereal food aid per country and per person in the Central African subregion during 1986
(in kilos)

Cameroon	1.16	-	1.06	0.1
Central African Republic	4.05	-	2.04	2.0
Chad	14.3	2.74	2.13	9.4
Congo	1.06	-	1.06	-
Equatorial Guinea	9.72	4.0	5.73	0.25
Sao Tome and Principe	58.0	26.0	29.0	3.0

Source: ECA mean figures based on 1987 FAO data on quantified food aid, No. 5.

Agricultural development constraints

55. In most countries of the subregion, rural-urban drift is one of the most important and characteristic factors that limit the expansion of agricultural production. The villages are being depopulated with the result that the rural labour force is dwindling and the farming population is growing old.

56. In Sao Tome and Principe, the farming population accounted in 1970 for 67.5 per cent of the total active population. By 1980, this percentage was no more than 51.6.

57. Owing to the gradual decrease in the active farming population in the Congo, the National Development Plan projects that in 1996, one active farmer would have to feed 10 people.

58. On the whole, agriculture in the subregion still remains at the subsistence level. There is virtually no trade between the towns and villages. The farmers are therefore obliged to live in autarky and to produce only just enough for their families. In the hinterland, certain regions are cut off from others and the fact that the road infrastructure is inadequate and means of transport not sufficiently available make it difficult to market produce.

59. Farming techniques and practices have not much evolved and the rudimentary implements for farming mainly consist of hoes and cutlasses with the women most often providing the manual labour. What is more, the practice of shifting cultivation on burnt land further encourages the loss of soil fertility.

60. Because storage, conservation and marketing facilities are lacking in producing areas and there are many middlemen, producer prices are low and post-harvest losses exceed 50 per cent in cases.

61. Also, because villages are scattered and the population density is low, not to mention the fact that certain areas have rugged physical features, any intervention is difficult and expensive.

62. In this connection, production and investment costs both in agriculture and livestock are twice as high in Gabon as they are in the neighbouring countries.

63. Finally, because local products are not as competitive as imported products which are in most cases subsidized, producers do not feel encouraged to produce a marketable surplus.

64. The table below allows for a comparison to be made of the calorie cost of some staple foods in Brazzaville, the Congo.

Table 9: Price per kilogramme and per kilo-calorie of various starchy foods in Brazzaville from 1978 to 1983
(CNSEE prices)

	1978		1983	
	CFAF/Kg	CFAF/Kcal	CFAF/Kg	CFAF/Kcal
Fufu	110	32	102	59
Chikwangue	105	77	152	112
Bread	111	42	222	84
Rice	245	68	311	86
Plantain	100	135	185	250
Potatoes	276	230	395	327

Source: UNICEF, Mother and child health situation in the Peoples Republic of the Congo.

Fufu: Cassava flour; Chikwangue: Cassava bread.

65. In Bangui, local maize costs twice as much in calorie terms as imported cereals and bread nearly as much as cassava. In Cameroon, local rice is sold at a higher price than imported rice. Indeed the distance between producing and consuming areas is one factor that goes to raise the selling price of local rice.

Socio-cultural factors in food consumption

66. In traditional African societies, food consumption still depends very much on socio-cultural factors which to some extent affect the nutritional status of individuals. Food is generally associated with rituals and daily customs and both individuals and society have conformed to and kept those habits long after the reasons which led to their adoption have been forgotten.

67. In many societies in Africa family practices regarding the sharing of food have it, for example, that the lion's share should be reserved for the head of family or for older persons. Mothers and children generally resceive a smaller share than their nutritional needs would allow.

68. In certain societies in Cameroon, people avoid eating with their mothers-in-law and giving them left overs from the previous day but it happens that women cook only once a day and generally do so in the evening.

69. The word taboo refers to acts or things that are not done or which are considered evil, abnormal or bad. Food taboos or beliefs constitute for each society a law that governs the behaviour of everyone and their attitude to a particular food item or group of foods. Prohibitions may be permanent or circumstantial as is the case for women who are pregnant or nursing, infants before they are weaned and adolescents before puberty. It should also be noted that many foods are prohibited on the grounds of sickness, physical or mental imbalance.

70. Prohibitions may apply to an entire population, ethnic group, clan, family, male or female, child and so on. They may also forbid a category of individuals from eating one or several foods whose nature may vary from country to country and from place to place.

71. There is currently no precise data and information on the various taboos that apply in the various countries. However, what information is available indicates that it is in particular those groups vulnerable to malnutrition, namely mothers and children, who suffer the most. The nutritional impact of such restrictions on women and children is all the more serious since they apply at a time when their food and nutritional needs are high. Such practices, among others, are the cause for the growth problems of many children and the near-permanent nutritional stress which certain women undergo.

72. The few examples of protein food taboos listed below are given for information.

73. In most countries of the subregion, many tribes believe that eggs should neither be fed to children nor to pregnant women. In Cameroon for example, children are not allowed to eat eggs before they walk and in the Central

African Republic, they may not do so before they are 15 months old. In that country also, monthers-to-be are forbidden to eat eggs because their children will not speak early and they are also refused caterpillars under the pretext that their children will not cry early.

74. In Sao Tome and Principe, certain tribes do not eat eggs and chicken and young children are forbidden to eat fish because they might get worms.

75. The examples are many and varied for each country, ethnic group and so on. It would be exceeding the scope of this report to list them all. Suffice it to indicate only that such taboos and beliefs reflect social, moral and religious values in each of these societies and apply mainly to foods of animal origin.

Other nutritional problems in the subregion

76. There is little data on the nutritional status of people in the subregion as a whole. Where such data exist, the scope is often limited. However, the surveys and studies conducted on this subject in the various countries all show high rates of protein-energy malnutrition with a higher frequency among children aged 0-5 years. The protein imbalance in the diet of the people is caused by the fact that cassava constitutes the bulk of the diet and is very poor in protein.

77. This food imbalance is all the more remarkable in the Congo as the consumption of carbohydrates accounts for more than 70 per cent of the calorie intake. The calorie deficiency seems to be higher in the urban areas, particularly among women and children in low-income households. In this regard, a survey of 900 school children of the age of eight in Brazzaville indicates that many children do not eat their fill and many of them have to settle for one meal a day.

78. Animal product consumption is also very poor in the towns. Indeed, beef which is the meat most consumed in the urban areas is relatively expensive and not always available. In the rural areas this deficit is more or less compensated with game and other hunting products.

79. Malnutrition among young children is attributed to a certain number of factors which include premature weaning, protein-deficient weaning foods (too much diluted and unenriched porridge), poor nutritional status of mothers and unhygienic conditions which promote certain infectious diseases. Low family purchasing power and ignorance of child food needs also contribute to such malnutrition.

80. Food deficiencies have to do with several essential nutrients whose nature and importance varys both with the geographical location and the socio-economic category of people. In the rural areas, subsistence farming hardly covers the food needs of people and rarely are imported foods available. Those rural areas which have a better road transport network are far more exposed to malnutrition than the more remote areas because the farmers prefer to sell their produce for other goods and a substantial part of their output thus escapes family consumption.

81. In the towns and urban centres, the risks of malnutrition are all the greater for low-income social groups or large households. In Brazzaville, for example, more than 40 per cent of the households have more than six members.

82. In spite of the differences among regions and socio-economic groups, it can be said today that all social strata in the urban and rural areas of the subregion are exposed to the risk of malnutrition. Women and children are the most exposed to such risks. Indeed, quite apart from family inequalities in terms of food consumption, women and children are also the victims of prohibitions or taboos regarding a certain number of foods essential to a balanced diet.

83. For example, many tribes forbid the giving of eggs to children under 15 months. Chicken, ducks and other animals are forbidden to women and children.

84. In the Central African Republic, about 1 per cent of the population is debilitated as a result of protein-deficiency and many cases of kwashiorkor have been reported.

85. Also worth mentioning is the prevalence of anaemia, more particularly among women and children. Responsible for such anaemia are insufficient iron in the diet, low consumption of foods of animal origin and the presence of parasitic diseases.

86. Finally, endemic goitre, caused by iodine deficiency, is also one typical nutritional disease in the subregion. It has been developing most substantially in the Central African Republic, especially in the forest areas of Bangassou and Lobaye among certain ethnic groups. In Cameroon, the prevalence of endemic goitre in certain regions is so high that the disease has been accorded priority in public health policy.

87. In contrast, vitamin deficiency seems to be very limited in the subregion and subject at times to seasonal variation. This is mostly due to the high consumption of green-leafed vegetables (which are very rich in vitamin A) and palm oil.

CHAPTER II
CONSUMPTION OF NON-CONVENTIONAL FOOD PRODUCTS IN THE SUBREGION

88. The concept of non-conventional food is rather difficult to define. The term is used in this study to distinguish on the one hand, between foods that normally constitute the staple diet of Africans (cereals, roots and tubers, livestock meat) and, on the other hand those foods that are generally unknown or little used by consumers. Owing to the complexity of food and eating habits and social behaviour relative to food whether as a matter of cultural, physiological, psychological or ecological reasons, it is rather difficult in Africa to draw the line between what is conventional food and what is not.

89. Food consumption patterns may vary very widely in accordance with the types of foods consumed in various communities for cultural and traditional reasons. This is why certain food products which go down very well and are appreciated by one community may be unknown or considered non-conventional by another.

90. For example, breadfruit which is a staple food for the people of Sao Tome and Principe and certain regions of Madagascar is virtually unknown in Zambia. Cassava leaves which are widely consumed in certain countries of Central Africa and in Madagascar do not feature in the food habits of the people of Togo and other West African countries. Conversely, gari or tapioca prepared from cassava and which forms the staple in such West African countries as Nigeria and Togo is unknown or very little used in Central Africa. Monkeys are common food in certain areas of Central Africa but in other parts of Africa, they are considered sacred animals or taboo.

91. This chapter will review collected or gathered plant and animal foods and wild game. In spite of their nutritional and food value, particularly for rural people, their contribution to national economies is not generally taken into account. Merely because they are collected in their natural state and because of their insignificant commercial value, it is difficult to quantify their consumption.

Products of animal origin

(a) Wild game as a source of protein

92. The African continent highly abounds in a diversified range of wildlife, particularly those belonging to the species of artiodactyles. These wild animals have been exploited since the origin of man himself and most people in the rural areas still depend on wild animals for the bulk of their daily supply of animal protein.

93. In the Central African subregion, the animal protein deficit resulting from inadequate national production of livestock meat is in part compensated for by game, particularly in the rural areas.

94. Game or bush meat refers to any meat from any type of wild animal. Almost all mammals, birds, reptiles and rodents are consumed with the exception of certain types of birds and felines such as lions, panthers and leopards which are forbidden because they happen to be the totems of certain communities.

95. Hunting is generally regulated in all the countries. However, poaching is widely practised. Certain farmers hunt both for their own immediate needs and to secure monetary income. Indeed, there is a large and very profitable market for bush meat in the major towns among the high-income social strata. In this regard, the restaurants in the capital towns are regularly supplied with all kinds of game meat.

96. Among the rodents, the great alaucode (tryonomys swinderianus)more widely known as "grasscutter" in certain West African countries is highly prized.

Its meat is in great demand in the major towns where it is sold dearer than beef.

97. With regard to reptiles, it would appear that large snakes like boas and pythons are the most appreciated. It is also interesting to note that monkeys are widely consumed in the subregion, in particular the green monkey.

98. It is obviously difficult to evaluate the production of bush meat because this depends on how much of it is consumed. Game meat is consumed either fresh or dried. Generally, however, bush meat is sold on the urban market smoked or dried.

99. Game meat consumption varies considerably from region to region and between towns and villages. In the Congo, bush meat consumption is very high in the river basin areas, Sangha and Likouala where each person consumes as much as 9.1 kg/year. In other regions of the rural areas, the consumption is 4.5 kg/year/person while in the towns, game meat consumption is only 0.1 kg/year/person.

100. Unfortunately, certain countries are currently losing their wild game because of bush fires and the intensive and often irrational exploitation of wildlife.

(b) Animals collected or gathered

101. The animals collected include caterpillars, termites, grasshoppers, snails, frogs and turtles. Just like game, these animals are extensively consumed in the subregion both in the rural and urban areas. They are generally found on the daily menu of the rural people and to a lesser extent, on that of urban people.

102. Consumption of animals gathered both seasonally and cyclically in this way is linked to regional features and the relative importance of such animals in the diet is more local than national. Because they are of good nutritional value, they play an important role in the food intake of rural people during the lean season.

103. Caterpillars are widely consumed in the subregion. Because they are very much appreciated, they are sold on urban markets either fresh or dried. They are very rich in fats and iron and are often added to meat in green-leaf sauces, particularly gnetum.

104. Termites are also widely consumed in the subregion. They are mixed with bean flour paste to make a highly appreciated dish in the Central African Republic to accompany the millet balls to which they provide a protein supplement.

105. In Cameroon, termites and locusts are mainly consumed in the cotton and livestock raising areas while maggots and caterpillars are respectively consumed in Yaounde and the areas where coffee, cocoa and tobacco are grown. Again in Cameroon, snails are very widely gathered and consumed in the cocoa and tobacco-growing areas.

Products of plant origin

106. Vegetables, in particular green-leafed vegetables, occupy an important place in the diet of Central African people. Although their energy content is limited, they constitute an important element for food balance in terms of minerals and vitamins because they contain such essential nutrients as protein, iron, calcium, vitamin A and vitamin C. Their supplemental value becomes particularly important during the lean seasons and they prove to be indispensable in a diet where animal products are insufficient.

107. Green-leafed vegetables are very much appreciated and used to prepare a certain number of dishes, mainly the sauces which accompany the starchy or cereal staples eaten in particular regions.

108. Some such vegetables are gathered in their natural state while others come from cultivated plants such as cassava, sweet potatoes, cocoyams, pumpkins and asparagus beans.

109. Among the leaves gathered in the subregion, gnetum, commonly referred to as koko is the vegetable used in the food eaten by all social strata in many of the countries. Currently, the gnetum species grows spontaneously in the forest and by watercourses. The leaves are generally finely grated before being used in the sauces but they can also be eaten raw and provide an appreciable supply of proteins, macro- and micro-nutrients.

110. In the Central African Republic, gnetum is used mostly by the people of the western or south-western parts of the country. In the Congo, a distinction is drawn between two species, namely gnetum Africanum (the small-leafed and more widespread variety) and gnetum buchlozianum, the large-leafed variety.

111. Apart from koko there are many varieties of vegetables that are gathered for subsistence use by rural people in the subregion. However, there are no data at the moment concerning their identity and the quantities consumed or gathered.

112. Among the gathered vegetables consumed in the Congo, mention can be made of tinia (dioscoree mangenotii) and nsekeni (bosquoa angolensis). In the Central African Republic, kankalenque is consumed mainly by the Ali people who live in the Ombella M'poko region. Vaa, belonging to the spinach family, is a very sweet vegetable.

113. In the category of green leaves gathered from cultivated plants, cassava leaves are the most widely consumed. The preparation varies with local customs and preferences but they are very rich in protein (about 4 per cent) and provide both minerals and vitamins.

CONCLUSIONS AND RECOMMENDATIONS

114. Poor agricultural performance (mainly in the growing of food for home consumption), the low degree of monetarization in the rural areas and the very high urbanization rates in certain countries have helped to worsen the food deficit facing the countries of the subregion.

115. Even though potentially self-sufficient in staples such as starchy foods and cereals, on the whole, the subregion depends largely on the outside world for many other cereal staples such as wheat and rice and for meat, dairy products, sugar and edible oils.

116. Agricultural development is being held back because certain countries of the subregion are remote, the farming population is diminishing and ageing, road infrastructure and transport facilities are inadequate, and the farmers have very low technical expertise.

117. However, using the substantial revenue they secure from such mineral resources as petroleum, manganese and diamonds as well as from cash crops, some countries of the subregion have been able to cope somewhat with the rising cost of their food imports.

118. Based as it is on starchy food, with few exceptions depending on the region, the diet of people in the subregion is unbalanced in terms of protein. The balance could be restored through greater consumption of cereals and animal products. Regrettably, however, much of the local millet, sorghum, rice and maize that is grown is processed into alcohol and this constitutes a substantial loss in terms of nutrition.

119. What is more, certain taboos and prohibitions, particularly those affecting young children and pregnant women with regard to protein foods, often have adverse effects on the nutritional status of the people. Poor food hygiene in certain countries promote the development of infectious diseases which gain the ascendancy during the lean season when food intake is not sufficient.

120. Non-conventional food products, in particular collected or gathered plant and animal products and big game are widely consumed in the subregion and make a significant contribution to the nutritional balance of the diet of rural people. The urban population has less easy access to these products because of the poor supply facilities in the towns.

121. The importance of wild animals as a source of animal protein for those people who eat them needs no further demonstration. Currently however, there is no scientific basis for evaluating the available potential. Indeed, wild animals have practically not been as intensively researched as have domesticated animals. Their nutritional importance for great numbers of people has always been under-estimated and overlooked by the policy-makers responsible for rural development planning.

122. For those African countries in which human needs are more pressing, the use of game or bush meat as a souce of secure and lasting nourishment in terms of protein has become imperative. And yet, it is regrettable to note that in certain countries, this exceptionally valuable biological wealth is perishing under the effect of wanton and irrational exploitation by poachers and through the effect of certain methods of farming.

123. Many varieties of plant and animal products that are collected or gathered are also consumed by many communities in the subregion. Such products have good nutritional value and largely supplement the mineral and protein taken in with food in those areas where milk and fish are not available.

124. As for various vegetables, in particular green-leafed vegetables, they have their place in the food habits of the rural people and to a lesser extent in that of the urban population. Because of their mineral and vitamin content and the not insignificant degree of protein they contain, they have proved indispensable to a diet in which animal products are insufficient.

125. In many countries where the food and nutritional situation shows serious problems in terms of protein and energy, it is important to increase not only the availability of food for each inhabitant but also the consumption of protein-rich foods.

126. Given the high cost of food imports and the gradual changes in food habits that they bring about, it would be necessary, among other things, to develop and promote the consumption of local products.

127. The objective of this report is therefore to highlight the importance of the wide variety of food products that are usually unknown or little used as a source of food for many people living in the rural areas of Africa.

RECOMMENDATIONS

128. The lack of official statistics that could be used to evaluate the contribution of non-conventional foods to national economies (if only in nutritional terms) results from the lack of interest on the part of government planners. With a view then to increasing the consumption of such protein-rich foods and to securing regular supplies of them in future so as to meet the food needs of people and promoting co-operation in this area, the following recommendations are submitted for approval:

(a) A subregional study should be conducted in order to evaluate the consumption and use of wild plants and animals in the various ecological zones;

(b) Given the fact that wild animals are a significant renewable source of food, appropriate measures and actions should be taken at the local, national and regional levels in order to preserve the enormous forest potential through rational management and exploitation;

(c) Subregional and/or regional seminars or workshops on non-conventional food resources should be organized with a view to sharing information and experiences on those foods that are little or underutilized so that waste would be avoided and existing food resources increased.

ANNEX
BIBLIOGRAPHY

1. World Food Programme, Rapport de mission chargée de l'évaluation intérimaire du projet République centrafricain 2652; Développement rural à objectifs multiples, September 1987.

2. FAO Trade Yearbook, volume 40, 1986.

3. Agricultural Development Policy Survey, Interim report, volume II, CIATA, Brazzaville, July 1986.

4. Ministry of Rural Development, Peoples Republic of the Congo, Conseil national de l'agriculture. Analyse de la situation agro-alimentaire en République populaire du Congo, volume I, November 1967.

5. UNICEF, Situation sanitaire des enfants et des mères en République populaire du Congo.

6. United Republic of Cameroon, National Nutrition Survey, Final Report, October 1978, University of California, Los Angeles, Nutrition Assessment Unit (UCLA), USAID.

7. World Food Programme, Note on the Central African Republic, July 1984.

8. FAO Circulaire sur les pêches No. 770.13, Etudes nationales pour le développement de l'aquaculture en Afrique, Central African Republic, 1985.

9. Central African Republic, Food security and strategies for consideration, Maurice Adouaka-Parou, June 1988.

10. Réflexion sur la situation alimentaire et nutritionnelle en République centrafricaine, Possibilités d'action, UNICEF, Bureau de Bangui, December 1983.

11. Peoples Republic of the Congo, Ministère de la santé et des affaires sociales, Direction générale de la santé publique, Direction de la santé maternelle et infantile et de l'education pour la santé, Situation of food and nutritional programmes in the Peoples Republic of the Congo.

12. Ministry of Economic and Physical Planning, Republic of Cameroon, Current nutritional situation in Cameroon, paper presented at the National Seminar on Food and Nutritional Strategies, Yaounde, 26-29 July 1988, by Dr. Pondy Njiki Otto.

13. Paper presented by Mr. Selle Gilbert on the Nutritional education of farming communities in the Central African Republic, Institut national, technologie alimentaire, Ecole supérieure des sciences de la nutrition, Tunis, 1979-1980.

14. Interim report on the national foods strategy of Sao Tome and Principe, prepared for UNDP by the Royal Institute for the Tropics, Amsterdam, August 1985.

15. Seminar on Food and Energy from Unconventional Sources with application of Nuclear Techniques, Bangladesh Atomic Energy Commission, Dacca, 19-30 July 1976; some comments about requirements and unconventional food, "Unconventional foods, traditional food patterns and food and nutrition policies".

16. Nature and Wildlife, International Review for Nature Conservation in Africa, volume III, No. 2, April-June 1987, volume III, No.4, October-December 1987.

17. FAO, Food and Nutrition, volume XIII, No. 1, 1987.

18. FAO, Fifth World Food Survey, 1985.

19. Republic of Cameroon, Ministry of Economic and Physical Planning, Direction de la Planification. National Seminar on Food and Nutritional Strategies, Yaounde, 26-29 July 1988. Theme No.7: "Current nutiritional situation in Cameroon" by Dr. Pondy Njiki Otto.

20. Food for Africa, The promotion of traditional and under-utilized foodstuffs, Report of a Regional workshop organized by the Zambia Alliance of Women in collaboration with FAO, Lusaka, 12-19 May 1985.